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The Second Record of Predation on Pselaphid Beetles

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On October 22, 1949 a series of 23 red-backed salamanders, *Plethodon cinereus* (Green), was collected beneath rotting logs in a beech-sugar maple forest (Warren's Woods) near Lakeside, Berrien County, Michigan. The stomach contents of these specimens were examined. The stomach of one salamander contained two pselaphid beetles, namely, a male *Melba sulcatula* (Casey) and a female *Tychus minor* LeConte. In addition, this stomach also held 1 pseudoscorpion, 1 oribatid mite, 4 collembolans (1 podurid, 1 sminthurid and 2 entomobryids), fragments of a lepidopterous larva, ants, a heteropterian, and of fly and beetle larvae. Generally speaking, such arthropods are commonly found in the leaf and log mold of such forests, and the two pselaphids belong to species that are relatively common in the Chicago Area in floor niches, such as leaf mold, log mold and debris of tree holes. It is safe to conclude that the salamander ate these pselaphids in its normal search for food in the forest floor.

Previously (Park, 1947, p. 103, 115), the only record of predation on pselaphids was the finding of *Batrissodes hairstoni* Park in the stomach of a *Plethodon cinereus* on May 1, 1947, in the Clark County State Park, near Uno, Indiana. These two records, taken together, make a stronger case. The Indiana predation record was open to two interpretations; e.g., this Uno stomach contained, in addition to the pselaphid, several ants (*Aphaenogaster*) and since *Batrissodes* is associated often with ants of this genus there was some doubt as to whether the pselaphid was eaten in the log mold, as such, or whether it was snapped up in the course of feeding upon the ants in one of their nest galleries.

There are now two authentic records of red-backed salamanders feeding on pselaphid beetles. Both records are from the same type of forest, from the same habitat niche, at two widely separated localities (southwestern Michigan and southern Indiana), in two widely separated seasons (May and October). Furthermore, the three species of pselaphids eaten belong to three

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genera, each in a taxonomically distant tribe of the family, but with an ecologically equivalent habitat niche in common.

Over the past several months 52 additional red-backed salamanders have been analyzed similarly to further investigate the points noted above. These comprised 20 more from Warren's Woods, 22 from Turkey Run State Park, Indiana and 10 from Vilas County, Wisconsin. None contained pselaphid beetles in their stomach contents. In summary, of the 76 red-backed salamanders examined, 2.6 per cent had eaten pselaphids.

It is concluded that the red-backed salamander may be regarded as a natural predator of forest floor Pselaphidae in eastern North America.

LITERATURE CITED

Park, Orlando

- 1947 Observations on *Batrissodes* (Coleoptera: Pselaphidae), with particular reference to the American species east of the Rocky Mountains. Bull. Chicago Acad. Sci., vol. 8, no. 3, p. 45-132, pl. I-IX.